



PCI Expansion System User's Manual



64-bit/66MHz 7 Slot Series

PRELIMINARY

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Preface

Advisories

Three types of advisories are used throughout this manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. They are Notes, Cautions, and Warnings. The following is an example of each type of advisory. Use caution when servicing any electrical component.

**NOTE**

An amplifying or explanatory comment related to procedural steps or text.

**CAUTION**

Used to indicate and prevent the following procedure or step from causing damage to the equipment.

**WARNING**

Used to indicate and prevent the following step from causing injury.

Disclaimer: We have tried to identify all situations that may pose a warning or caution condition in this manual. However, MAGMA does not claim to have covered all situations that might require the use of a Caution or Warning.

Safety Instructions



WARNING

The Tower PCI Expansion System is to be installed on desktop or tabletops only. The unit will become unstable if operated as a floor standing unit and unintentional force is applied to the top of the unit.

Before handling the MAGMA PCI Expansion System, read the following instructions and safety guidelines to prevent damage to the product and to ensure your own personal safety. Refer to the “Advisories” section for advisory conventions used in this manual, including the distinction between Warnings, Cautions, and Notes.

- ◆ Always use caution when handling/operating the computer. Only qualified, experienced, authorized electronics personnel should access the interior of the computer. The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- ◆ Use extreme caution when installing or removing components. Unplug the power cord before removing the cover. The cover can only be opened by persons having appropriate technical training and experience necessary to be aware of hazards to which they are exposed in performing a task and of measures to minimize the danger to themselves or other persons. Refer to the installation instructions in this manual for precautions and procedures.



WARNING

High voltages are present inside the expansion system when the unit's power cord is plugged into an electrical outlet. Disconnect the power cord from its source before removing the enclosure cover. Turning off the power switch does not remove power to components.

Never modify or remove the radio frequency interference shielding from your workstation or expansion unit. To do so may cause your installation to produce emissions that could interfere with other electronic equipment in the area of your system.

When Working Inside a Computer

Before taking covers off a computer, perform the following steps:

1. Turn off the computer and any peripherals

2. Disconnect the computer and peripherals from their power sources to prevent electric shock or system board damage.
3. Follow the guidelines provided in “Regulatory Compliance Statements” on the following page.
4. Disconnect any telephone or telecommunications lines from the computer.

In addition, take note of these safety guidelines when appropriate:

- ◆ To help avoid possible damage to systems boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- ◆ When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

**CAUTION**

Do not attempt to service the system yourself except as explained in this manual. Follow installation instructions closely.

Protecting Against Electrostatic Discharge

**Electrostatic Discharge (ESD) Warning**

Electrostatic Discharge (ESD) is the enemy of semiconductor devices. You should always take precautions to eliminate any electrostatic charge from your body and clothing before touching any semiconductor device or card by using an electrostatic wrist strap and/or rubber mat.

Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedure to reduce the risk of damage to components. MAGMA strongly encourages you to follow

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proper ESD procedure, which can include wrist straps and smocks, when servicing equipment.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- ◆ When unpacking a static-sensitive component from its shipping carton, do not remove the component's anti-static packaging material until you are ready to install the component in a computer. Just before unwrapping the anti-static packaging, be sure you are at an ESD workstation or grounded.
- ◆ When transporting a sensitive component, first place it in an anti-static container or packaging.
- ◆ Handle all sensitive components at an ESD workstation. If possible, use anti-static floor pads and workbench pads.
- ◆ Handle components and boards with care. Don't touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.

Chapter 1 Introduction

The 64-bit/66MHz 7 Slot PCI Expansion System

MAGMA's 64-bit/66MHz 7 Slot PCI Expansion System is a general-purpose bus expansion system for the Peripheral Component Interconnect (PCI) local bus. The PCI expansion system consists of a 64/66 host interface card, a set of four 3-meter expansion bus cables (a shielded, high-speed cable), an expansion daughter card, an expansion motherboard and a rack-mount or tower enclosure with a power supply.

General Specifications

- Backplane: Seven 64-bit/66MHz PCI slots
- Standard Cable Length: 3 meter
- PCI Local Bus Specification: Revision 2.2
- PCI Bridge Architecture Spec: Revision 1.1
- Interconnect Bandwidth: 5 Gbps full duplex
- MTBF: 60,000 hours
- Operating Environment: 0° to 50° C Operating Temperature
-20° to 60° C Storage Temperature
5% to 85% Relative Humidity, Non-condensing
- Supported Operating Systems: Windows XP/2000/NT/ME/98SE
MacOS X, Mac OS 9
- Warranty: 1 Year Return to Factory

Rack-mount Specifications

- Enclosure: 4U rack-mount (All Steel)
- Dimensions: 19" W x 7" H x 17.7" D
- Weight: 24 lb or 11.804 kg
- Cooling: (1) 70-105 CFM fan (removable/cleanable air filter)
- Available Options: Disk Drive Bays for up to eight 3.5" internal disk drives
18 inch Rack-mount Slide Kit
- Power Supply: 400W (auto-switching) or
Hot-swappable 300W redundant (auto-switching)

Tower Specifications

- Enclosure: ATX Mid-Tower (Steel Chassis/Plastic Front)
- Dimensions: 7"W x 18.1"H x 17.3"D
- Weight: 22 lbs. or 10kg.
- Cooling: (1) 35 CFM high volume fan
- Disk Drive Bays: (3) 5.25" external, (1) 3.5" external & (3) 3.5" internal
- Power Supply: 400W (auto-switching)

Pre-Installation Information

Before using the 7 Slot 64-bit/66MHz PCI Expansion System you should perform the following steps:

- Inventory the shipping carton contents for all of the required parts
- Gather all of the necessary tools required for installation
- Read this manual

Follow these suggested guidelines and cautions while setting up your PCI Expansion System:

- Only use the power cable(s) provided by MAGMA
- Only use the interface cables provided by MAGMA
- Use keyed connectors (to prevent attaching a cable backwards)
- Be careful when routing signal cables to your devices
- Avoid sharp bends or folds in the signal cable
- Provide enough slack to allow easy device placement
- Beware of sources of scuffing and abrasion damage to the cables
- Secure the devices in their shelves using the appropriate hardware
- Use the screws or brackets supplied with the device (suitable mounting brackets, adapters, and hardware are available from your local computer dealer or retailer)

Parts List

| <u>Qty</u> | <u>Item</u> |
|------------|---|
| 1 | 7 Slot Rack-mount or Tower PCI expansion enclosure |
| 1 | Set of four 3-meter shielded CAT-5 patch cables (Grey, Blue, Red & Green) |
| 1 | 64/66 PCI host interface card |
| 1 | Power supply cord (2 supplied with 300W redundant PSU) |
| 1 | Software CDROM |
| 1 | User's Manual |

**NOTE**

The PCI Expansion System is shipped with many parts packaged in a separate box within the larger box that the expansion system is shipped in.

Tools Required for Installation

In order to complete the installation of the PCI expansion system you will need the following tools:

- A suitable Electrostatic Discharge Protective environment
- One Phillips-head screwdriver

Chapter 2 Installation Guide

The following steps will guide you in completing the installation of your new 64-bit/66MHz 7 Slot PCI Expansion System.



Electrostatic Discharge (ESD) Warning

All PCI cards are susceptible to electrostatic discharge. When moving PCI cards, it is best to carry the cards in anti-static packaging. If you need to set a PCI card down, be sure to place it inside or on top of an anti-static surface. For more information, see "Protecting Against Electrostatic Discharge".



WARNING

High voltages are present inside the expansion system when the unit's power cord is plugged into an electrical outlet. Disconnect the power cord from its source before removing the enclosure cover. Turning the system power off at the power on/off switch does not remove power to components. High voltage is still present.



CAUTION

Before touching anything inside the enclosure, move to an ESD station and follow proper ESD procedure. Failure to do so may result in electrostatic discharge damaging the computer or its components. For more information, see "Protecting Against Electrostatic Discharge".

Step One: Install 64-Bit Host Interface

Power down your host computer system.

Use the procedures for shutting down your system provided in your owner's manual or system documentation. Turn off power to your computer.

Remove the cover.

Install the 64-Bit Host Interface in any available PCI slot in your host computer and secure with a retaining screw.

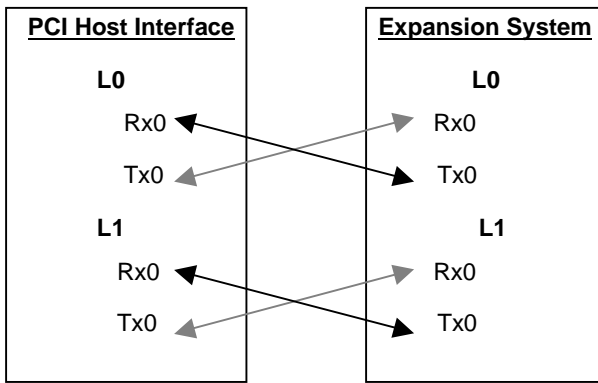
The 64-bit/66MHz PCI Host Interface Card is a standard "short" universal PCI adapter card. Install it in your host computer by inserting

the card into any available PCI slot and securing it with a retaining screw.

Step Two: Attach PCI Expansion and Power Cable(s)

A set of four 3-meter shielded, high-speed cables are included with your PCI Expansion System. One end of each cable should be connected to the RJ45 connectors on the 64-bit Host Interface and the other end should be connected to the correct RJ45 connector on the rear of the expansion system by following the diagrams shown below:

PCI Expansion Cable Connection Diagram



CAUTION

All cables attached to the expansion system must be securely fastened. If not fastened tightly, the connectors may cause intermittent or lost connections.

Check that the expansion system On/Off switch is set to the OFF position.

Connect the power cord to the power-in receptacle located at the rear of the enclosure. If your expansion system includes a 300W redundant power supply, make sure you attach a power cord to each power supply module and set the power supply switch to the ON position.



NOTE

If at all possible, plug all power cords from the PCI Expansion System and your host computer into a shared power strip, preferably one that has surge and noise suppression circuitry built into it.

Step Three: Recheck Installation

Check your installation before powering up the PCI Expansion System for the first time. Although the power supply has an over voltage protection device built into it, it may not "trip" in time to fully protect a device that has been improperly connected or whose power cable has been damaged.

Step Four: Power Up



NOTE

The 400-watt and the 300-watt redundant power supplies are auto switching, which means the power supply will automatically adjust to the voltage required for the region you are in.



NOTE

For systems that have a 300W redundant power supplies; a red push button is provided on the back of the enclosure to silence the audible alarm in the event of a power supply failure.

You must apply power to the PCI Expansion System first and then power up your host computer. This will allow the higher numbered PCI buses in your hierarchy to be at a stable state at the time that the host system issues its master power-on bus reset. In systems that perform automatic PCI bus configuration, this will allow the configuration code to recognize the PCI bus hierarchy and the attached devices.

If you have several PCI Expansion Systems in your configuration, you should power up the most "downstream" expansion system first, then each expansion system moving "upstream" and finally the host system last.

There is an On/Off switch on the front panel as well as an LED indicator to indicate power status. Verify that the green power indicator is ON.

There may also be an On/Off switch on the power supply, located in the back of the expansion system. Make sure the power supply switch is in the 'On' position before powering up.

When powering up, pay close attention to the eight LEDs on the 64-bit Host Interface and the eight LEDs on the rear panel of the expansion system. **All LEDs must be solid green before the system will function properly. If any LED is not solid green, power off the system and check that the RJ45 connectors are seating properly and connected to the correct port before powering up again.**

**WARNING**

The expansion system will not work properly or may not be recognized by the host computer unless all LEDs on the Host Interface and rear panel are solid green.

Ensure that you have connected the cables properly by referring to the diagram in **Step Two**.

Step Five: Install Software Driver/Verify Installation

**NOTE**

Only Microsoft Windows XP and Windows 2000 users need to install the 64-bit/66MHz PCI Expansion Driver. All other operating systems should automatically detect the PCI Expansion System and configure properly.

Window XP users, go to page 8.

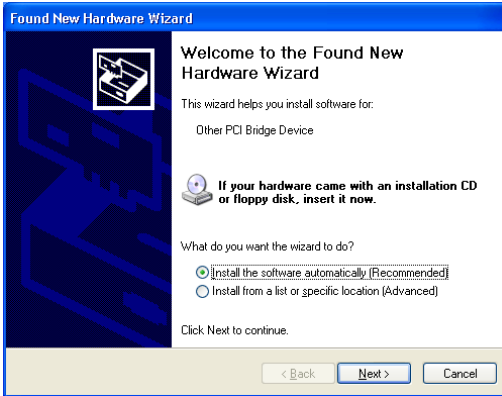
Windows 2000 users, go to page 11.

Windows ME users, go to page 16.

Mac OS users, go to page 21.

Windows XP Driver Install/Verification

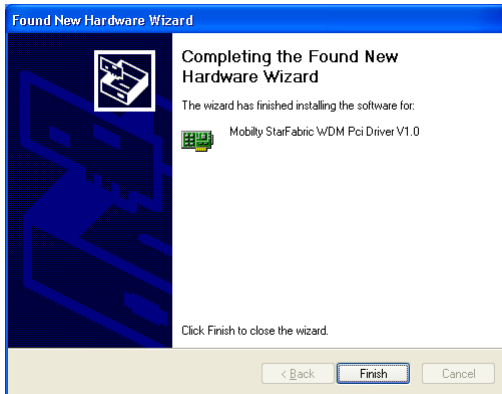
The following dialog will appear the first time you boot your computer with the PCI Expansion System installed:



Insert the CDROM that was included with your expansion system into the CDROM drive of your computer.

Choose **Install the software automatically (Recommended)**, then click **Next**.

The following dialog should appear:



Click **Finish**.

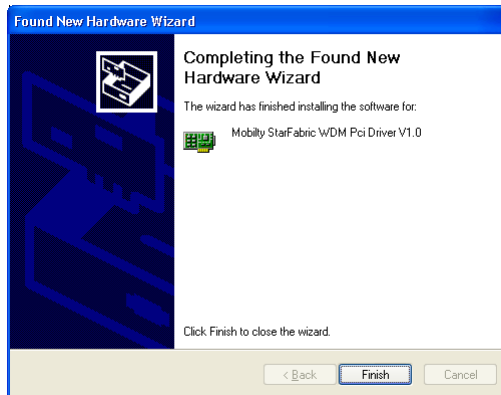
The following dialog will appear:



Choose **Install the software automatically (Recommended)**, then click **Next**.

Your computer should automatically find the appropriate driver and display the following dialog:

The following dialog should appear:



Click **Finish**.

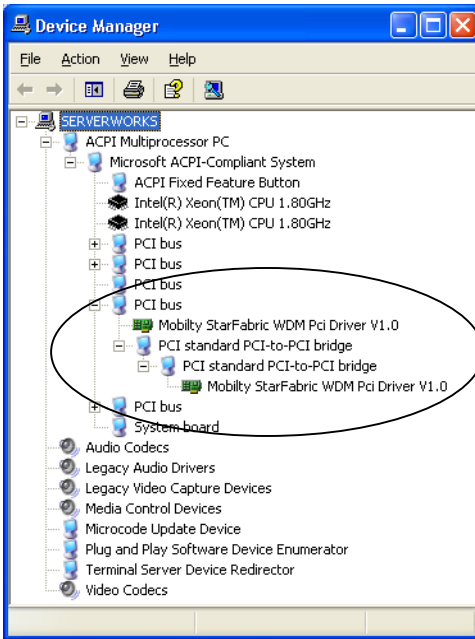
Now you should see a yellow call-out box appear in the lower right hand corner of your screen that reads, "**Your new hardware is installed and ready to be used.**"

You can verify that the expansion system is installed correctly by checking that there are no exclamation mark (bangs) in the

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Device Manager under the PCI Bus that the expansion system is installed on.

Go to: Start → Control Panel → System (use Classic View) → Hardware → Device Manager → Choose 'View devices by connection' → locate the PCI Bus that the expansion system is connected to. Your Device Manager should look similar to the following:



PCI device installation is now complete. Continue to **Step Six, page 23.**

Windows 2000 Driver Install/Verification

The following dialog will appear the first time you boot your computer with the PCI Expansion System installed:



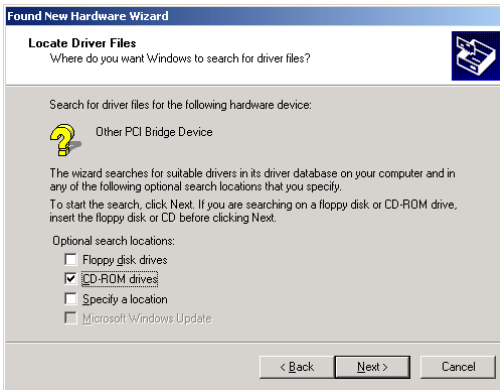
Click **Next**.

The following dialog will appear:



Choose **Search for a suitable driver for my device (recommended)**, then click **Next**.

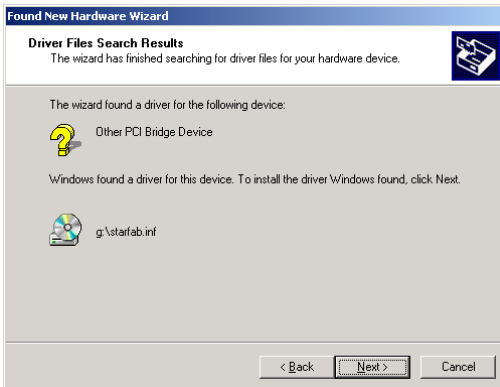
The following dialog will appear:



Insert the CDROM that was included with your expansion system into the CDROM drive of your computer.

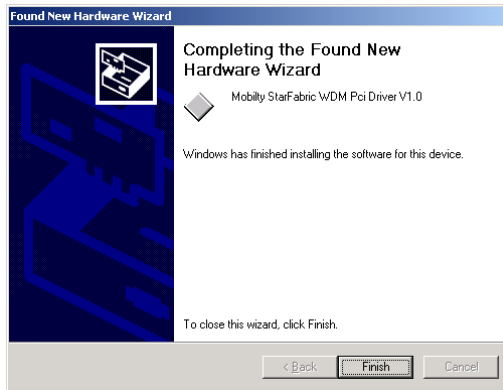
Make sure **CD-ROM drives** is checked, then click **Next**.

Your computer should automatically find the appropriate driver and display the following dialog:



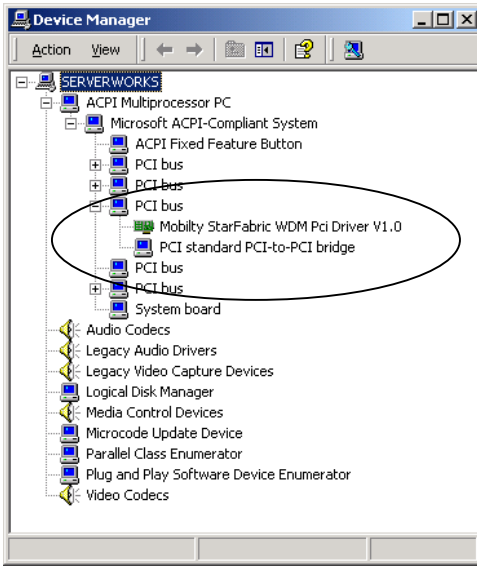
Click **Next**.

The following dialog will appear:




Click **Finish**, but you're not finished installing the expansion system yet. You have only installed half of the expansion system bridge devices. You can verify this by going to the Device Manager to see the bridges that you have just installed:

Go to: Start → Settings → Control Panel → System → Hardware → Device Manager → Choose 'View devices by connection' → locate the PCI Bus that the expansion system is connected to. Your Device Manager should look similar to the following:

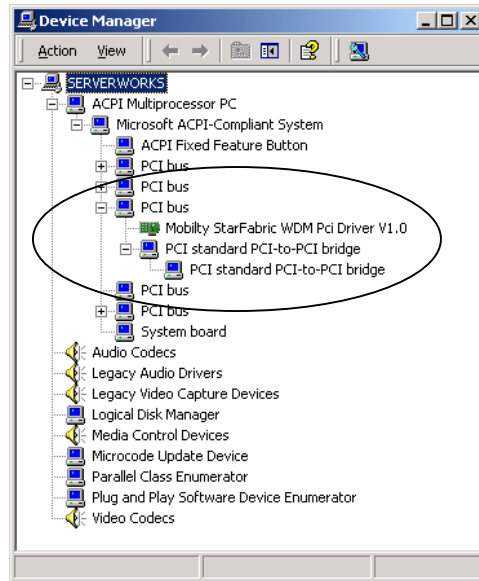


Although you were not prompted to do so, you must restart your computer in order for your computer to see the PCI slots in the expansion system.

Go to:  Start → Shut Down → Choose 'Restart' from the drop down menu → click OK.

After restarting, your computer should automatically find the next PCI bridge device. It may not be obvious to you that your computer found any new hardware, but you can verify that the expansion system is installed correctly by checking that there are no exclamation mark (bangs) in the Device Manager under the PCI Bus that the expansion system is installed on.

Your device manager should now look similar to the following:



PCI device installation is now complete. Continue to **Step Six**, page 23.

Windows ME Automatic Installation/Verification

The required software for the 64-bit/66MHz PCI Expansion System is included with the Windows ME operating system. However, you should follow the installation instructions below carefully.

The following dialog will appear the first time you boot your computer with the PCI Expansion System installed:



Choose **Automatic search for a better driver (Recommended)**, then click **Next**.

The following dialog will appear:



Click **Finish**.

The following dialog will appear again:



Choose **Automatic search for a better driver (Recommended)**, then click **Next**.

The following dialog will appear again:



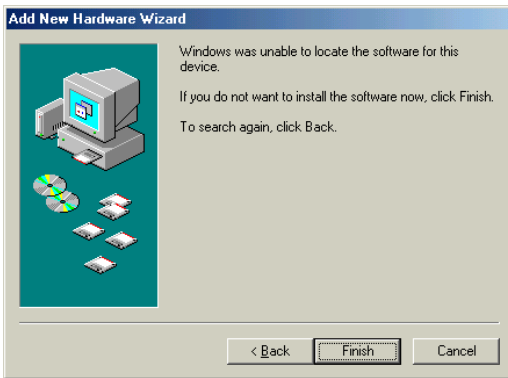
Click **Finish**.

The following dialog will appear:



Choose **Automatic search for a better driver (Recommended)**, then click **Next**.

The following dialog will appear, but don't worry this is normal.



Click **Finish**.

Even though Windows ME was unable to locate the software for the last device installed. Everything should still work properly.

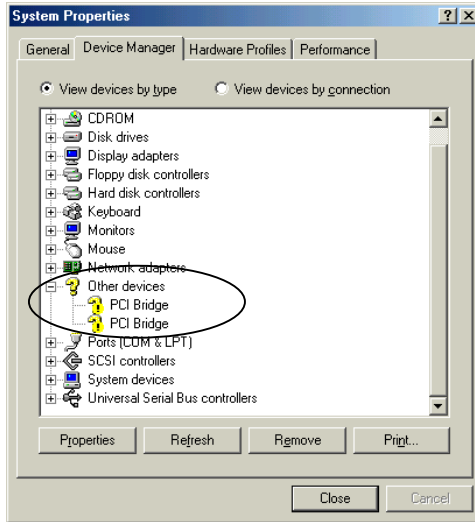
To verify installation, go to Device Manager.

Start → Settings → Control Panel → System → Device Manager → View devices by type

Under **Other devices**, there should be two **PCI Bridges**. There will be a 'Question Mark' in front of both PCI Bridges. This is

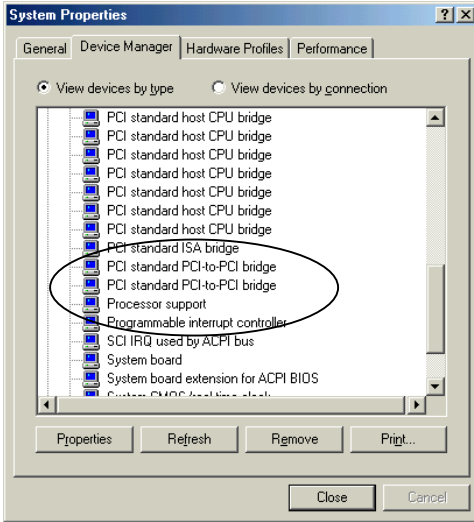
normal.

Your device manager should now look similar to the following:



Now go down to **System devices**, you should see two **PCI standard PCI-to-PCI bridges**. These devices should not have 'Question Marks' or 'Exclamation Marks' in front of them.

Your device manager should now look similar to the following:



PCI device installation is now complete. Continue to **Step Six, page 23.**

Mac OS Automatic Installation/Verification

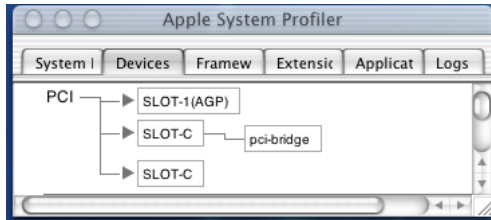
Mac OS X

When using Mac OS X no additional software or drivers are needed. The operating system should automatically recognize the PCI Expansion System.

To verify installation, go to Apple System Profiler.

Apple Menu → About This Mac → More Info → Devices

You should see a **pci-bridge** device listed under PCI as shown below:



Any PCI Cards that you install in the expansion system will appear behind the pci-bridge device.

Continue to **Step Six, page 23.**

Mac OS 9

When using Mac OS 9 no additional software or drivers are needed. The operating system should automatically recognize the PCI Expansion System.

Continue to **Step Six, page 23.**

To verify installation under Mac OS 9, you need to use a software utility called **MagmaSlots**.

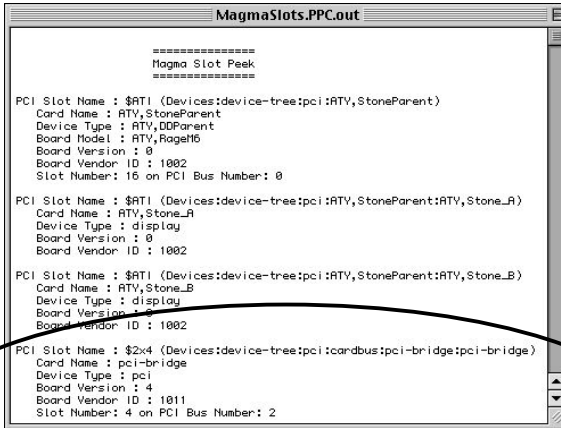
MagmaSlots is a simple utility application for displaying information on PCI cards installed in the Macintosh computer. It uses the Mac OS NameRegistry to discover what slots have PCI cards in them, and then displays basic information for each card in a simple console window.

MagmaSlots can be downloaded our web site at:
www.magma.com/support/support.htm.

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Launch the **MagmaSlots** application by double-clicking its icon. It is recommended that you launch **MagmaSlots** from a location on your desktop.

A console window similar to the one shown below should appear:



```
=====
Magma Slot Peek
=====

PCI Slot Name : $ATI (Devices:device-tree:pci:ATV,StoneParent)
Card Name : ATV,StoneParent
Device Type : ATV,DDParent
Board Model : ATV,RageH6
Board Version : 0
Board Vendor ID : 1002
Slot Number: 16 on PCI Bus Number: 0

PCI Slot Name : $ATI (Devices:device-tree:pci:ATV,StoneParent:ATV,Stone_R)
Card Name : ATV,Stone_R
Device Type : display
Board Version : 0
Board Vendor ID : 1002

PCI Slot Name : $ATI (Devices:device-tree:pci:ATV,StoneParent:ATV,Stone_B)
Card Name : ATV,Stone_B
Device Type : display
Board Version : 0
Board Vendor ID : 1002

PCI Slot Name : $2x4 (Devices:device-tree:pci:cardbus:pci-bridge:pci-bridge)
Card Name : pci-bridge
Device Type : pci
Board Version : 4
Board Vendor ID : 1011
Slot Number: 4 on PCI Bus Number: 2
```

If you see this entry, it means that your computer has recognized the MAGMA expansion system.

Step Six: Power Down and Remove Cover

It is recommended that you first shut down the host computer correctly and then power down the expansion system to avoid 'computer lock-up'.

Rack-mount Enclosure

Four screws retain the cover on the Rack-mount enclosure. They are located on the rear of the unit along top edge of the top cover. Slide cover back about 1 inch to disengage and remove straight up.

Tower Enclosure

Two screws retain the cover on the Tower enclosure. They are located on the rear of the unit, one on the top and one on the bottom of the cover's back edge. Slide the cover out from the back of the unit.

Step Seven: Install PCI Cards

Generally, when installing PCI cards in the expansion system, it should make no difference what slot order you place your cards in, unless specified by the PCI card manufacturer.

Slot ordering in the 7 Slot 64-bit/66MHz expansion system should begin with the slot farthest away from the installed daughter card – labeled **SLOT 4**.

Install PCI cards following PCI card manufacturer's recommendations.



CAUTION

Prior to installing the MAGMA PCI Expansion System, you should be familiar with the installation procedures for the PCI cards that you are installing in the expansion system. Some PCI card manufacturers recommend that you install their software driver(s) prior to installing the hardware. If this is the case, you should install their driver before you connect and power up the expansion system.



NOTE

It is good practice to install one PCI device at a time, especially when configuring a large system. This can save you time later if you experience a problem while installing several new devices. If you install all PCI devices at one time, then experience a problem, it can be difficult to determine which device is causing the problem.

Make sure that all PCI cards are fully seated in their connectors. When correctly seated in its connector, you will notice a firm resistance when

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you pull up gently on the card. To keep the cards in place, secure them in the enclosure with their retaining screws (supplied with the PCI Expansion System).

Take care when routing cables within the PCI expansion system in order to avoid damaging the signal cables (especially unshielded flat ribbon cables) or the power cables for internally installed devices. Be sure to leave enough "slack" in the cables to allow you to easily remove them if necessary to service the device(s).



NOTE

The sheer number of PCI cards and device drivers available makes it impossible for MAGMA to fully test and certify all available PCI cards for use in the PCI expansion system. Our best advice to you in this regard is to insist on full PCI Specification compliance from your card and system vendors. Cards and systems should be at least PCI Specification Revision 2.0 compliant or better. Compliance in your system motherboard, PCI cards and console firmware (or BIOS) is your best assurance that everything will install and operate smoothly.

Not all PCI cards are as "well-behaved" as they should be. Sometimes simply moving a PCI card that is having a problem to a different slot, or reordering your cards in their slots, will alleviate "behavior" problems.

Step Eight: Power Up Again

You must apply power to the PCI Expansion System first and then power up your host computer.

Remember, when powering up, pay close attention to the eight LEDs on the 64-bit Host Interface and the eight LEDs on the rear panel of the expansion system. **All LEDs must be solid green before the system will function properly. If any LED is not solid green or flickering, power off the system and check that the RJ45 connectors are seating properly and tightly before powering up again.**



WARNING

The expansion system will not work properly or may not be recognized by the host computer unless all LEDs on the Host Interface and rear panel are solid green.

Step Nine: Install PCI Card Software



NOTE

Prior to installing the MAGMA PCI Expansion System, you should be familiar with the installation procedures for the PCI cards that you are installing in the expansion system. Some PCI card manufacturers recommend that you install their software driver(s) prior to installing the hardware. If this is the case, you should install their driver before you connect and power up the expansion chassis. You may be required to reboot before connecting the expansion chassis.

Your computer should now recognize any PCI devices you have installed in the expansion system and prompt you to load drivers and/or software if you have not done so already. Install PCI device software following the manufacturers recommendations.



WARNING

You will most likely be prompted to Shut Down and Reboot your system several times during PCI device installation. Please be patient, each Shut Down and Reboot does serve a purpose and is required for correct installation. If you Shut Down and Reboot when requested, it may save you from having to make a call for Technical Support.

You can verify that your computer has recognized any PCI devices installed in the expansion system by doing the following:

Windows Users:

Go to the Device Manager and choose 'View by Connection'. You should be able to see all devices installed in the expansion system by locating the **PCI standard PCI-to-PCI bridge** and clicking the + signs to display the chain of all PCI devices that your computer has found installed in the expansion system.

Macintosh Users:

Mac OS X: Go to the Apple System Profiler and look under Devices. You should be able to see all devices installed in the expansion system by locating the **pci-bridge** and clicking the arrow to display the chain of all PCI devices that your computer has found installed in the expansion system.

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Mac OS 9: You need to use a utility provided by MAGMA called **MagmaSlots**. **MagmaSlots** is available for download at www.magma.com/support/support.htm.

Step Ten: System Should Be Up and Running

Your system should now be up and running.

If you are having trouble with the system, turn off the host computer and the expansion system, then check that all cards are seated in the slot properly and all cables are connected securely.

If you are still having problems, contact MAGMA Technical Support for more help.

Finishing Touches

After your system is working properly, replace any empty slots with slot covers, and replace the host computer cover and the expansion system cover.

Chapter 3 Bus Hierarchy

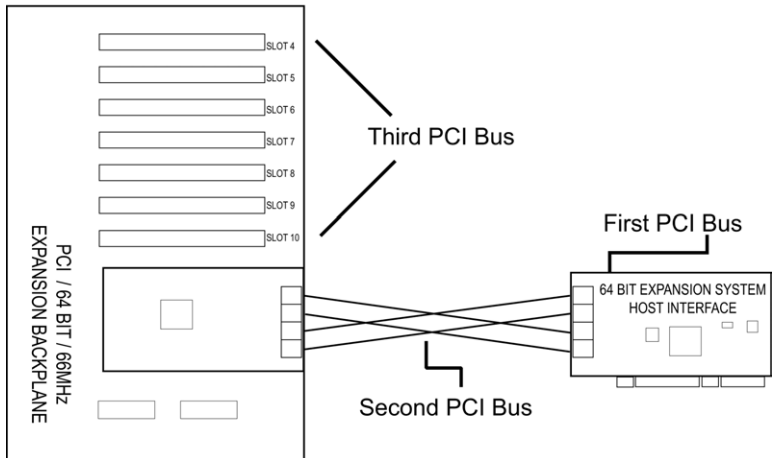
Bus Hierarchy

The following figure is representative of the PCI Bus hierarchy for the 64-bit/66MHz 7 Slot PCI Expansion System. This figure pictorially conveys the overall PCI bus topology of the system.

The key point in the following figure of the 7 Slot Topology is the connecting cables between the Host Interface and the Expansion Backplane is actually a PCI bus itself.

In general, we do not know what the actual Bus numbers are. We only know how they increment starting from the MAGMA Host Interface.

7 Slot Topology



NOTE

All PCI cards installed in the PCI Expansion System will appear on the Third PCI Bus behind the PCI Bus that the Host Interface is installed on.

Chapter 4 Warranty & Tech Support

Product Warranty

MAGMA PCI Expansion Systems carry a one-year warranty against defects in materials or workmanship from the date of shipment to the original purchaser. Any products found to be defective in material or workmanship will be repaired or replaced promptly.

Please Note: Products that have been modified will not be covered under this warranty.

30 Day Money Back Guarantee

Any single standard MAGMA manufactured product may be returned within 30 days of purchase for a full refund of the price paid for the product being returned (must be in new condition in the original packaging). If you are not satisfied, or chose the wrong product by mistake, you do not have to keep it. Please call our Sales Group for a Return Merchandise Authorization number *before* returning the product.

Free Technical Assistance

MAGMA is dedicated to providing competent, responsive technical support both before and after the sale. We have staffed our support department with professional software and hardware engineers and given them the finest tools. MAGMA provides unlimited support to all customers for the life of all products purchased.

Warranty & Repair in Seven Days

Any MAGMA manufactured product returned for repair under warranty will be repaired and shipped within one week unless it is necessary for a Technical Support Engineer to contact you and discuss the repair. Repaired products are returned by the same shipping method as they are received. Please call for a Return Merchandise Authorization number *before* returning the product.

Please Note: All returns to MAGMA for Repair/Replacement/Credit must be shipped back to MAGMA with all Shipping Charges and Duties Paid. Shipments that arrive with freight or duties due, or returned collect, will be refused and sent back to the sender at their own expense.

Returns for Repair/Replacement/Credit

It is not required, though highly recommended, that you keep the packaging from the original shipment of your MAGMA Product. However, if you return a product to MAGMA for warranty repair/replacement or take advantage of the 30 day money back

guarantee, you will need to package the product in a manner similar to the manner in which it was received from our plant. MAGMA cannot be responsible for any physical damage to the product or component pieces of the product (such as the host or expansion interfaces for PCI expansion systems) that are damaged due to inadequate packing. Physical damage sustained in such a situation will be repaired at the owner's expense in accordance with **Out of Warranty Procedures**. Please, protect your investment, a bit more padding in a good box will go a long way to insuring the device is returned to us in the same condition you shipped it in. Please call for a **Return Merchandise Authorization** number *before* returning the product.

Out of Warranty Repair

Any out of warranty MAGMA manufactured product can be repaired at the cost of MAGMA parts, plus current labor rate (not to exceed 50% off the current list price for the same or equivalent product) plus freight. Please call for a **Return Merchandise Authorization** number *before* returning the product. There will be a minimum charge for 1 hour's labor for evaluation of the product/unit. If repairs are needed, this will be applied to the repair of the product. Once evaluation has been completed, a Customer Support Representative will contact you with any options you may have and to authorize the repair work before the repair is performed.

Advanced Replacement Service

This Fee Based Service is primarily geared towards correcting severe problems encountered in a system within the first 90 days after shipment from the factory, but it is also available, on a graduated fee scale during the term of the Warranty Period. Under the terms of this Service, MAGMA will replace a warranted MAGMA manufactured product prior to receiving the defective product from the customer. Advanced replacements are available upon credit approval or by providing a VISA, MasterCard or American Express card number as security for the returned product. The cost for this service is the appropriate, **non-refundable**, graduated fee for Advanced Replacement, as detailed in the chart below, plus freight.

| PRODUCT | TIME OWNED | | |
|---------------------------|------------|------------------|---------------|
| | 0-90 days | 91 days - 6 mos. | 6 mos. - 1 yr |
| PCI Expansion System | \$150.00 | \$300.00 | \$450.00 |
| PCI Expansion Boards | \$50.00 | \$100.00 | \$150.00 |
| 300/400W Power Supply | \$50.00 | \$100.00 | \$150.00 |
| Other Power Supply | \$25.00 | \$50.00 | \$75.00 |
| Any Product under \$50.00 | \$25.00 | \$25.00 | \$25.00 |

Please Note: This fee schedule subject to change. For current information consult your Technical Support Engineer at the time of the request.

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The item must be returned to MAGMA with all parts and components that were shipped with it, in undamaged condition. The Customer shall be responsible for missing components and/or systems or components that are returned and are found to be physically damaged.

Non-Returned Advanced Replacements: Advanced Replacements that are not returned within *30 days* of replacement shipment will automatically be charged to the securing credit card. If the product is returned after the credit card is charged, the entity (person or company) will be responsible for a Restocking Fee. This fee will be 25% of the listed price of the replaced unit, with a minimum Restocking Fee of \$25.00. Product will only be accepted for return and restocking if the Advanced Replacement is less than 90 days from date of replacement unit shipment.

Contacting Technical Support

For a quick response, send an email to support@magma.com with a detailed description of your problem, or visit our web site at:

www.magma.com/support/support.htm

Our support department can also be reached by fax at (858) 530-2733 or by phone at (858) 530-2511. Support is available Monday through Friday, 8:00 AM to 5:00 PM PT. When contacting MAGMA Technical Support, please be sure to include the following information:

- 1) Name
- 2) Company Name
- 3) Phone Number
- 4) Fax Number
- 5) Email Address
- 6) MAGMA Product Name
- 7) MAGMA Serial Number
- 8) Computer Make
- 9) Computer Model
- 10) Operating System and Version
- 11) Make/Model of PCI cards in expansion system
- 12) Description of the Problem

Frequently Asked Questions

You can visit the MAGMA Technical Support FAQ pages on the Internet at:

www.magma.com/support/support.htm

Returning Merchandise to MAGMA

If factory service is required, a Service Representative will give you a Return Merchandise Authorization (RMA) number. Put this number and your return address on the shipping label when you return the item(s) for service. **MAGMA will return any product that is not accompanied by an RMA number.** Please note that MAGMA WILL NOT accept COD packages, so be sure to return the product freight and duties-paid.

Ship the well-packaged product to the address below:

MAGMA
RMA # _____
9918 Via Pasar
San Diego, CA 92126
USA

It is not required, though highly recommended, that you keep the packaging from the original shipment of your MAGMA product. However, if you return a product to MAGMA for warranty repair/replacement or take advantage of the 30-day money back guarantee, you will need to package the product in a manner similar to the manner in which it was received from our plant. MAGMA cannot be responsible for any physical damage to the product or component pieces of the product (such as the host or expansion interfaces for PCI expansion systems) that are damaged due to inadequate packing. Physical damage sustained in such a situation will be repaired at the owner's expense in accordance with Out of Warranty Procedures. Please, protect your investment, a bit more padding in a good box will go a long way to insuring the device is returned to use in the same condition you shipped it in. Please call for an RMA number first.

APPENDIX A Compliance

FCC Class A Notice

Note - This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



NOTE

The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interferences or to be noncompliant with the appropriate standards for its intended use.

CE Certification



The product(s) described in this manual complies with all applicable European Union (CE) directives. For computer systems to remain CE complaint, only CE-complaint parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques. MAGMA will not retest or recertify systems or components that have been reconfigured by customers.

Safety Standards



The products(s) described in this manual has met the safety requirement of Underwriters Laboratories (UL) for the US and Canadian market based on UL's published Standards for Safety.

Declaration of Conformity

Manufacturer's Name: MAGMA, Inc.
 A Mobility Electronics, Inc., Company
 Manufacturer's Address: 9918 Via Pasar
 San Diego, CA 92126
 USA

Declares that the product:

Type of Equipment: Computer Peripheral Equipment
 Product Name: MAGMA PCI Expansion System
 Model Number: **P7T46S, P7R46S, P7RR6S**

to which this declaration relates, meet the essential health and safety requirements and is in conformity with the relevant EU Directives listed below:

EU EMC Directive 89/336/EEC

EU Low Voltage Directive 73/23/EEC

EN 55022:1998/A1:2000; CISPR 22:1997/A1:2000 Class A, Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment

EN 61000-3-2:1995 Power Frequency Emission for AC Main Harmonics
 (Not Applicable for units under 75 Watts)

EN 61000-3-3:1995 Voltage Fluctuations
 (Not Applicable for units under 75 Watts)

EN 50024:1998 Immunity, ITE Requirements

-EN 61000-4-2 Electrostatic Discharge (ESD) Immunity
 (Supersedes IEC 801-2)

-EN 61000-4-3 (Formerly ENV 50140) Radiated RF Field Immunity
 (Supersedes IEC 801-3 & IEC 1000-4-3)

-EN 61000-4-4 EFT Immunity for AC and I/O Lines
 (Supersedes IEC 801-4)

-EN 61000-4-5 Surge (Line-Ground & Line-Line) Immunity

-EN 61000-4-6 (Formerly ENV 50141) Conducted Radio Field (Common Mode) Immunity

-EN 61000-4-8 Power Frequency Magnetic Field Immunity

-EN 61000-4-11 Voltage Dip/Surge Immunity

EN 60950:2000 Safety of Information Technology Equipment (ITE) for CE certification

The technical documentation required to demonstrate the above products meet the requirements of the EMC Directive and Low Voltage Directive has been compiled by MAGMA and is available for inspection by the relevant enforcement authorities.

signed

Stan Seitz
 Vice President of Operations
 Scottsdale, AZ
 May 9, 2003

A signed original copy of this document is available from MAGMA.

